CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 84-88
NPDES NO. CA0006157

WASTE DISCHARGE REQUIREMENTS FOR:

STAUFFER CHEMICAL COMPANY
RICHMOND PLANT
RICHMOND, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Stauffer Chemical Company, hereinafter called the discharger, by application dated September 29, 1982, has applied for renewal of waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES).

2. The discharger manufactures aluminum sulfate, DEVRINOL® (a preemergent herbicide), and VAPAM®, (a soil fumigant). The plant also formulates packages, stores, and bulk loads several other agricultural pesticides, including thiocarbamates. A research laboratory and a pilot plant are also located on-site. No process wastewater is discharged to the wastewater treatment system. The treatment process consists of activated carbon treatment, neutralization, and clarification. Site runoff and the treated effluent is discharged via two evaporation ponds into a tidal basin tributary to San Francisco Bay.

3. The report of waste discharge describes the existing discharges as follows:

   a. Discharge 001 consists of cooling tower blowdown from the manufacture of alum and VAPAM®, boiler blowdown, steam condensates, equipment and floor washings, groundwater from the intercept trench, washdown water from the pilot plant, rinse and other waters from the research laboratory and storm water runoff from production and handling areas of various agricultural and industrial chemicals. Storm water runoff from the areas where agricultural chemicals are handled and groundwater from the intercept trench are collected in the agricultural pond and checked for COD as an indication of pesticide content. Runoff and groundwater which is highly contaminated with pesticides is hauled to a Class I disposal site while the remainder is routed to an activated carbon treatment system. Wastewaters from the research laboratory and pilot plant are also treated by the activated carbon system. Effluent from the carbon system is combinded with all other wastewaters then neutralized and clarified prior to discharge. The average discharge rate, excluding periods of no discharge, is 0.15 million gallons per day (mgd), but storm water runoff may increase the total discharge to about 1.5 mgd. The discharge rate varies

considerably with runoff because runoff is the major component of the discharge. The treated effluent is discharged into two evaporation ponds (in series), which discharge to an unnamed tidal basin tributary to San Francisco Bay, a navigable water of the United States, near the foot of South 51st street in Richmond.

b. Discharge 002 contains DEVRINOL®, several thiocarbamates, and toluene from contaminated groundwater infiltrating the storm drain system; runoff from undeveloped areas in the plant site, and adjoining off-site areas; and copper, zinc and tetrachloroethylene from unkown sources. Waste 002 discharges throughout the year, without treatment, to the unnamed tidal basin described in 3.a. above at a point near the foot of South 49th Street in Richmond.

4. The discharge is presently governed by Waste Discharge Requirements, Order No. 78-14 which allows discharge into the unnamed tidal basin.

5. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for San Francisco Bay and contiguous waters.

6. The beneficial uses of San Francisco Bay, and contiguous water bodies are:

Water contact recreation
Non-contact water recreation
Wildlife habitat
Preservation of rare and endangered species
Estuarine habitat
Fish migration and spawning
Industrial service and process supply
Shellfish harvesting
Navigation
Commercial and sport fishing

7. The Basin Plan states, in part:

a. "... It shall be prohibited to discharge:

1. "Any wastewater which has particular characteristics of concern to beneficial uses at any point at which the waste water does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, dead-end slough, similar confinded waters, or any immediate tributaries thereof.

Waste discharges will contain some levels of pollutants regardless of treatment. This prohibition will require that these pollutants, when of concern to beneficial uses, be discharged away from areas of minimal assimilative capacity such as nontidal waters and dead-end sloughs. This prohibition will accomplish the following:

a. Provide an added degree of protection from the continuous effects of waste discharge.

b. Provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions.

c. Minimize public contact with undiluted wastes.

d. Reduce the visual (aesthestic) impact of waste discharges."

b. "Execeptions to [this] Prohibition ... will be considered for discharges where:

a. an inordinate burden would be placed on the discharger relative to beneficial used protected and an equivalent level of environmental protection can be achieved by alternate means, such as alternative discharge site, a higher level of treatment, and/or improved treatment reliability; or

b. a discharge is approved as part of a reclamation project; or

c. it can be demonstrated that net environmental benefits will be derived as a result of the discharge."

8. The Basin Plan states in part:

a. "... It shall be prohibited to discharge:

"All conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin. The intent of the prohibition is to minimize the discharge of persistent toxicants into waters, thus protecting aquatic life and public water supplies. The prohibition recognizes that these substances can be most economically reduced at their source."

9. The discharge, 001:

a. Contains conservative toxic and deleterious substances.

b. Has particular characteristics of concern to beneficial water uses and is discharged at a point at which the wastewater receives less that 10:1 initial dilution.

10. The discharge, 002:

a. Contains conservative toxic and deleterious substances in quantities exceeding those achievable by an acceptable source control program.

b. Has particular characteristics of concern to beneficial water uses and is discharged at a point at which the wastewater receives less than 10:1 initial dilution.

11. Effluent limitations, toxic effluent standards, proposed pursuant to Section 301, 304, and 307 of the Clean Water Act and amendments thereto are applicable to portions of the discharge. Effluent limitations promulgated for the Aluminum Sulfate Production Category (40 CFR 415 B) prohibit the discharge of process wastewater. The proposed effluent limitations for the Pesticides Chemical Industries (F.R. vol 47. no. 230, and F.R. vol. 49. no. 115) prohibit the discharge of process wastewater from the formulation and packaging of all pesticides, and specify limits for VAPAM® and toluene.

12. Effluent limitation guidelines requiring the application of best available technology economically achievable (BAT) for all wastewater sources of this point source category have not been promulgated by the U. S. Environmental Protection Agency. Effluent limitations of this Order are based on the Basin Plan, State Plans and policies, and current plant performance. The effluent limits specified by this permit were developed by JRB Associates under contract with the U.S. EPA, and are considered to be equivalent to BAT by the U.S. EPA.

13. This Order serves as an NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21110 of Division 13) of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

14. The Board has notified the discharger and interested agencies and persons of its intent to reissue waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations.

15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED THAT, Stauffer Chemical Company, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The discharge of process wastewater is prohibitied.

2. Discharge of waste 001 which contains constituents of concern, and is discharged at a location that does not receive a minimum of 10:1 dilution, is prohibited.

3. Discharge 002 which contains constituents of concern, and toxic and deleterious substances above those levels which can be achieved by a program acceptable to the Board, is prohibited.

B. Effluent Limitations

1. Waste 001 shall not exceed the following limits:

Constituents	Units	30-Day Average	Maximum Daily
Settleable Matter	ml/l-hr	0.1	0.2
Total Aluminum	mg/l		1.5
Total Suspended Solids	mg/l	20.0	30.0
Total Thiocarbamates[a/]	ug/l	25.0	60.0
Toluene[a/]	ug/l	14.0	33.0
VAPAM® [a/]	ug/l	48.0	215.00

a/ To be measured in effluent from activated carbon treatment system.

2. The pH of waste 001 as discharged shall not exceed 8.5 nor be less than 6.5.

3. In any representative set of samples, waste 001 as discharged shall meet the following limits of quality:

TOXICITY: The survival of test fishes in 96 hour bioassays of the effluent as discharged shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

4. Where concentration limitations in mg/l are contained in this permit, the following mass emission limitations shall also apply as follows:

Mass Emission Limit in kg/d (g/d) = Concentration limit in mg/l (ug/l) x 3.79 x Actual Flow in mgd averaged over the time interval to which the limit applies.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved oxygen	5.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentrations than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	pH	Variation from natural ambient pH by more than 0.5 pH units.
c.	Un-ionized ammonia	0.025 mg/l as N, Annual Median 0.4 mg/l as N, Maximum

3. The discharges 001 and 002 shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. The discharger shall comply with all Prohibitions, Limitations, and Specifications of this order immediately upon adoption, except Prohibitions 2 and 3.

2. The discharger shall comply with Prohibition 2 by July 1, 1987. The discharger shall submit by May 15, 1985 a proposal with time schedule for achieving compliance. Compliance may be achieved by demonstrating to the satisfaction of the Board than an exception to the Basin Plan Prohibition should be granted. The discharger shall submit to the Board, by July 1, 1986 the proposed demonstration of Prohibition exception, or a demonstration that resources have been committed for compliance, such as a Draft Environmental Impact Report. The discharger shall submit by May 15th and November 15th, annually, reports demonstrating progress towards compliance.

3. The discharger shall comply with Prohibition 3 according to the following time schedule:

a. Submit, by March 31, 1985, to the Regional Board, for approval, a plan to identify the nature and source of pesticides, solvents, and other toxics in discharge 002.

b. Implement the plan by June 30, 1985, and submit progress reports to the Board by August 31 and September 30, 1985.

c. Complete the study by October 31, 1985, and submit the final report, to the Board, for approval, by November 30, 1985.

d. Submit recommended corrective measure(s) and detailed time schedules for implementation, to the Board, for approval by February 28, 1986.

e. Begin implementation of the corrective measures within 30 days after Board approval, but in no event later than May 31, 1986.

f. Achieve full compliance according to time schedule approved by the Regional Board.

4. The discharger shall review the design specifications of the wastewater treatment system to 1) document the efficiency of the treatment system as currently operated; 2) examine various methods of optimizing wastewater treatment efficienty if needed; 3) estimate cost of implementing the above improvements; and 4) estimate effluent quality which would result from implementing some or all of the above improvements. The report shall be submitted to the Regional Board for review within 15 months of adoption of this permit. This permit may be reopened and effluent limits modified based on the Board's review.

5. The discharger shall review and update annually its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a current contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

6. In order to prevent, or minimize the potential for, the release of toxic substances or other materials deleterious to water quality, from ancillary activities to the waters of the United States through plant runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage, the permittee shall develop and implement a Best Management Practices (BMP) plan.

   The BMP Plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document", dated June 1981, and prepared by the U. S. Environmental Protection Agency, Office of Water Enforcement and Permits, NPDES Technical Support Branch. At a minimum, the plan shall include the following:

a. BMP Committee
b. Reporting of spill incidents
c. Risk identification and assessment
d. Employee training
e. Inspectins and records
f. Preventive operation and maintenance
g. Good housekeeping
h. Materials compatibility
i. Security

The BMP plan shall address the following: installation of an alarm system for the wastewater treatment system; time schedules and procedures for the cleaning, inspection and replacement of all of the synthetic pond liners; time schedule and procedure for the testing for leakage, of all wastewater system piping; time schedule for inspection and calibration of all instruments; a determination of the compatibility of the agricultural pond and carbon column pond liners with the waste being stored in those ponds; and a determination of the stability of the evaporation ponds dikes.

In addition, the facility shall incorporate the conditions specifed in Provisions 3, 4, and 5, into the BMP plan.

The BMP plan shall be submitted to the Regional Bard for approval within 6 months of the effective date of this permit. The plan shall be implemented within 12 months of the effective date of this permit.

7. This permit shall be modified or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(c), and (d), 303(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved;

   (a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or,

   (b) Controls any pollutant not limited in the permit.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

8. The discharger shall comply with the self-monitoring program as adopted by the Board, and as may be amended by the Executive Officer.

9. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requiremets and Definitions" dated April 1977, except Items A.5., A.16., B.2. and B.3.

10. The requirements prescribed by this Order supersede the requirements prescribed by the Order No. 78-14 and Order No. 79-80 adopted on February 21, 1978 and July 17, 1979 respectively. All sections of Order No. 78-14, except section, D. Confinement Specifications, and all sections of Order No. 79-80 are hereby rescinded.

11. All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to Environmental Protection Agency regulatins (40 CFR 122.41K).

12. Pursuant to Environmental Protection Agency regulations [40 CFR 122.42(a)] the Discharger must notify the Regional Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application, or (2) a discharge of a toxic pollutant limited by this permit has occurred, or will occur, in concentrations that exceed the specified limits.

13. This Order expires on December 18, 1989. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

14. This Order shall serve as a National Pollutant Discharge Eliminatgion System Permit pursuant of Sectin 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Roger B. James, Executive Officer do hereby certify the foregoing is a full true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on December 18, 1984.

ROGER B. JAMES
Executive Officer

Attachments:
Standard Provisions & Reporting
Requirements, April 1977
Self-Monitoring Program
Resolution 74-10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF MONITORING PROGRAM
FOR

STAUFFER CHEMICAL COMPANY, RICHMOND

NPDES NO. CA0006157

ORDER NO. 84-88

CONSISTS OF

PART A, dated January 1978

AND

PART B

PART B

DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

Analyses, observations, and examinations shall be performed according to the specifications shown in Table I.

A. EFFLUENT

Station	Description
	At a point immediately after treatment by the activated carbon columns.
E-001	At any point in the E-001 waste stream from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present.
E-002	At any point in each storm runoff waste stream into the tidal basin tributary to San Francisco Bay at which all waste tributary to that stream is present.
RP	At a point in the runoff waste stream from the process and storage areas.

B. RECEIVING WATER

Station	Description
C-1-1 through C-1-'n'	At a point in the tidal basin, located at each point of discharge (including storm runof).
C-2	At a point in the tidal basin, located immediately prior to discharge to the culvert.
C-3	At a point in San Francisco Bay, located immediately southerly of the Santa Fe Railroad bridge.

C. LAND OBSERVATIONS

Station	Description
P-1 through P-'n'	Located along the periphery of the waste treatment or disposal facilities at equidistant intervals not to exceed 200 feet. (A sketch showing the locations of these stations will accompany each report).

D. MODIFICATION OF PART "A", DATED 1/78

1. Exclusions: Paragraphs C.3., C.4., C.5.c., C.5.d., D.4.b, and E.4.

2. Modifications: Paragraphs D.3.b.: Replace "... period of lower slack water." with "... end of high tide water period.", and delete "where sampling at lower slack water period is not practical, sampling shall be performed during higher slack water period."

I, Roger B. James, Executive Officer, here by certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 84-88.

2. Has been ordered by the Regional Board on the date shown below and becomes effective immediately.

3. May be reviewed at any time upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

ROGER B. JAMES
Executive Officer

December 28, 1984
DATED

Attachments: Table I

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001			E-002	All C Stat.	P	RP						
TYPE OF SAMPLE	C-X	G	Cont	G	G								
Flow Rate (mgd)			Cont										
BOD, 5-day, 20°C, or COD (mg/l & kg/day)													
Chlorine Residual & Dosage (mg/l & kg/day)													
Settleable Matter (ml/1-hr. & cu. ft./day)		W											
Total Suspended Matter (mg/l & kg/day)		W											
Oil and Grease (mg/l & kg/day)													
Coliform (Total or Fecal) (MPN/100 ml) per req't													
Fish Tox'y 96-hr. TL_{50} % Surv'l in undiluted waste	M						(6) E						
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity		2D/M			2 D/M								
pH (units)			Cont		2 D/M								
Dissolved Oxygen (mg/l and % Saturation)					2 D/M								
Temperature (°C)		2D/M			2 D/M								
Apparent Color (color units)					2 D/M								
Secchi Disc (inches)													
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)					2 D/M								
Arsenic (mg/l & kg/day)													
Cadmium (mg/l & kg/day)													
Chromium, Total (mg/l & kg/day)													
Copper (mg/l & kg/day)				M									
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day)													
Lead (mg/l & kg/day)													

TABLE 1 (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001			E-002	All C Stat.	P	RP					
TYPE OF SAMPLE	C-X	G	Cont	G	G							
Mercury (mg/l & kg/day)												
Nickel (mg/l & kg/day)												
Zinc (mg/l & kg/day)				M								
Phenolic Compounds (mg/l & kg/day)												
All Applicable Standard Observations		5 D/W		5 D/W	2 D/M	2 D/W	E					
Bottom Sediment Analyses and Observations												
Total Ident. Chlor. Hydrocarbons (mg/l & kg/day)												
Un-ionized NH_4OH					2 D/M							
Aluminum (mg/l & kg/day)		W										
Thiocarbamates (ug/l & g/day)		(2,3,4) 2 D/M										
Toluene (ug/l & g/day)		(2,3) 2 D/M		2 D/M	(5) 2 D/M							
DEVRINOL® (ug/l & g/day)		2 D/M		2 D/M	(5) 2 D/M							
EPTAM® (ug/l & g/day)				2 D/M	(5) 2 D/M							
Tetrachoroethylene (ug/l & g/day)				2 D/M	(5) 2 D/M							
COD		2 D/M										
Form 2C, part C		(8) Q										
VAPAM® (ug/l & g/day)		(2,3,7) 2 D/M										

Footnotes for Table I

(1) Testing shall be with a salmonoid species in a 96-hour renewal bioassay and with Stickleback in a 96-hour static test. Compliance shall be determined by the Stickleback bioassay. The discharger shall submit a report to the Regional Board within 10 months of adoption of this permit. The report shall correlate the results of the Salmonoid and Stickleback bioassays, and determine the cause of any variation between test results.

(2) If any measurement is in excess of the average limitation, this constituent shall be measured weekly for the next three weeks to determine the monthly average for that four (4) week period.

(3) To be sampled in the effluent from the activated carbon system, prior to dilution with additional waste waters.

(4) Report the concentration of the individual thiorbamates found; and the summation concentration of all thiocarbamates.

(5) Station C-3 only.

(6) Testing shall be with a salmonoid species in a 96-hour static test.

(7) Monitoring frequency shall be as stated for one year. After which time the Executive Officer may review the monitoring data and reduce the sampling frequency, if appropriate.

8. Analyses for constituents included in EPA Form 2C, Part C, shall be performed for one year according to the following methods:

Volatile Organic Toxic Pollutants shall be analyzed using EPA Method 624 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057. In addition, all other peaks appearing in the reconstructed ion chromotograph above the detection limit shall be quantified based on the nearest internal standard.

Acid and Base/Neutral Extractable Organic Toxic Pollutants shall be analyzed using EPA Method 625 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057. In addition, the five most prominent peaks appearing in the reconstructed ion chromatograph above the detection limit shall be quantified based on the nearest internal standard.

Analysis for all other pollutants shall be according to Standard Methods 15th ed.

LEGEND FOR TABLE I

TYPES OF SAMPLES

G = grab sample
C-X = composite sample - X hours (used when discharge does not continue for 24 hour period)
Cont = continuous

FREQUENCY OF SAMPLING

E = each occurrence
W = once each week
M = once each month
2 D/M = 2 days per month
Cont = continuous

TYPES OF STATIONS

E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations including pond dikes